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A NEW MYGALOMORPH SPIDER GENUS FROM MEXICO (NEMESIINAE, NEMESIIDAE, ARACHNIDA)

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ABSTRACT

A new mygalomorph genus, *Mexentypesa*, and its type species *Mexentypesa chiapas*, new species, are described from southern Mexico. The presence of claw tufts in association with biserially dentate paired claws in both males and females allies the genus to both the theraphosids and nemesiids; its sister group is suggested to be *Calisoga*.

INTRODUCTION

During a revision of mygalomorph genera previously placed in the Diplurinae, I examined two new genera that presented a new combination of characters that challenged my hypotheses of relationships of nemesiids and cyrtaucheniids (see Raven 1985). The problem arose because both of those genera have claw tufts, unlike most other co-familial taxa but like the theraphosoids. In mygalomorphs, claw tufts are found in barychelids, theraphosids, one paratropidid genus, plus the nemesiid *Neodiplothele* (see Raven 1985). That occurrence prompted me to treat the presence of claw tufts as a synapomorphy of the Theraphosoidina (Theraphosidae, Paratropididae, plus Barychelidae). Because the Nemesiidae is the sister group of the Theraphosoidina, the synapomorphic nature of claw tufts in the latter must be re-examined. The first of those genera is described here for an apparently unknown species.

MATERIALS AND METHODS

All eye measurements are given in ocular eyepiece units with interspaces expressed in diameters of an AME. All other measurements are in millimeters. Abbreviations are standard for the Mygalomorphae, except possibly for MOQ, median ocular quadrangle.

Claw tufts are each considered to be a dense cluster of hair arising from a separate cuticular pad lying between the outer edges of the bases of each paired claw and the tarsus. Hairs arising from the cuticle on the legs (as in some Australian *Aname* species) are merely extensions of the scopulae. A pseudosegmented tarsus is evident as a single ventral transverse weakness in the cuticle or as a recticulated area of weak cuticle resembling cracking mud; the effect of either condition is the downward flexion of the tarsus.

Mexentypesa, new genus

Type.—The type species of this genus is *Mexentypesa chiapas,* new species. The name is feminine and derives from a combination of Mexico and *Entypesa*, which the genus resembles.

Diagnosis.—Females may be distinguished from barychelids, paratropidids, and theraphosids by the biserially dentate paired claws, and from the barychelids *Monodontium* and *Troglothele* and the nemesiid *Spelocteniza* by the presence of well developed eyes and/or a digitiform apical segment to the posterior lateral spinnerets. Males are unique in the combination of biserially dentate paired claws, claw tufts, and all tarsi pseudosegmented. Both sexes are readily distinguished from all other nemesiids, save *Neodiplothele* (which has only two spinnerets), by the presence of claw tufts and from the cyrtaucheniid by lacking a third claw on any leg.

Description.—As for species.

Mexentypesa chiapas, new species
Fig. 1-9, Tables 1, 2

Types.—Male holotype, female paratype, from Ocosingo (altitude 900 m, Chiapas, Mexico, June 25, 1950 (C. and N. Goodnight, L. J. Stannard); deposited in AMNH.

Diagnosis.—As for genus.

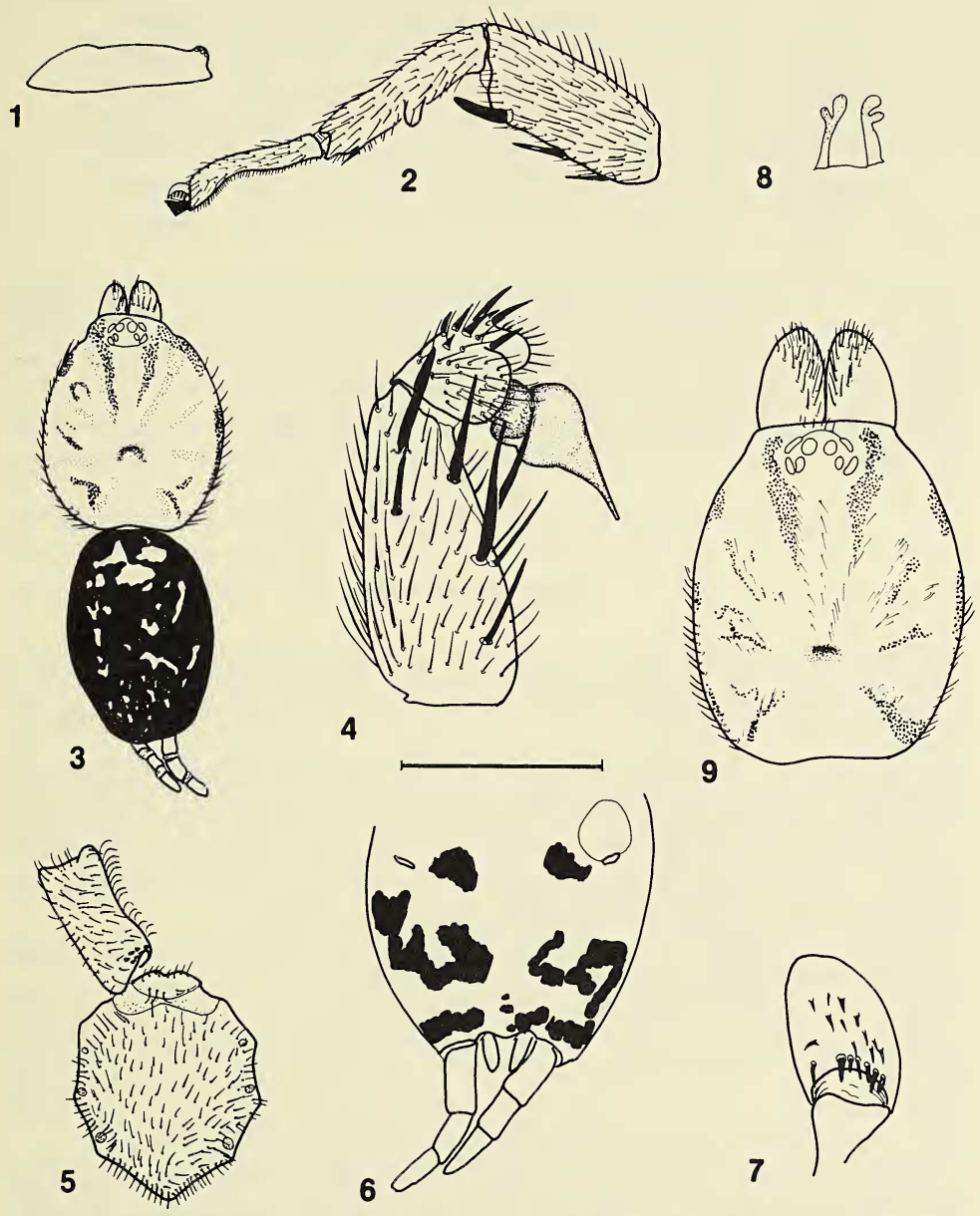
Description.—*Holotype male.* Carapace, chelicerae, and legs reddish brown; sternum, maxillae, and labium yellow brown; abdomen dorsally brown with white mottling, ventrally with brown areas on pallid yellow, booklung covers orange.

Carapace 4.16 long, 2.72 wide; few black setae on caput; lateral margins with strong setae for two thirds of carapace; caput flat, as high as thoracic region behind fovea; fovea short, recurved, with posterior indentation.

Eight eyes in two rows on distinctly raised tubercle; ratio of AME:ALE:PME:PLE, 10:9:6:8; from above, front row straight, back row recurved. Group occupies 0.46 of headwidth, 1.88 times wider than long. MOQ 1.47 times wider behind than long, and 1.16 times wider behind than in front. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.1; ALE-PLE, 0.1; PME-PLE, 0; PME-PME, 1.3.

Chelicerae short, slightly geniculate, with strong setae dorsally; rastellum of six stout spines (each about four times longer than wide at the base) curving down over fang. Fang smooth, slender. Intercheliceral face not modified; promargin with four large and five small spaced teeth, basomesally with four small teeth. Labium 0.25 long, 0.70 wide, without cuspules, two large sigilla in labiosternal suture; with transverse ridge medially. Maxillae 1.13 long in front, 1.25 long behind, 0.60 wide, anterior lobe smooth, distinct, without serrula; eight cuspules on inner angle, not on mound; lyra absent. Sternum 2.04 long, 1.84 wide, domed in cross-section; six sigilla oval, marginal, posterior pair 0.14 long.

Leg formula 41(2=3). Tarsi I-IV curved, pseudosegmented. Leg I incrassate; tibia incrassate with distinct megaspine on retroventral edge, metatarsus with distinct, proximal cuticular thorn retrolaterally. Preening combs absent. Scopulae: light, distal on metatarsus I, light on tarsus I, very thin on metatarsus and tarsus



Figs. 1-9—*Mexentypesa chiapas*, new species: 1-7. Male holotype: 1, cephalothorax, lateral view; 2, tibia, metatarsus, and tarsus I, retrolateral view; 3, cephalothorax, chelicerae, and abdomen, dorsal view; 4, palpal tibia, cymbium, and bulb, prolateral view; 5, sternum, maxilla, and labium; 6, abdomen and spinnerets, ventral view; 7, distal chelicera and fang, oblique anterior view. 8, 9. Paratype female: 8, spermathecae, ventral view; 9, cephalothorax and chelicerae, dorsal view. Scale lines = 4 mm for figs. 1, 3; 1 mm for figs. 4, 7, 8; 2 mm for others.

II, only scattered scopuliform setae on tarsi III and IV, absent elsewhere. Spines (no spines on tarsi): leg I, femur pl, d4, patella 0, tibia p2, v5 + megaspine, metatarsus v2 + process; leg II, femur pl, d4, patella p2, tibia p2, v6, metatarsus pl, v5; leg III, femur p3, d3, r4, patella p2, rl, tibia, p2, d3, r2, v6, metatarsus, p6, dl, r4, v7; leg IV, femur p2, d3, rl, patella p2, rl, tibia p2, dl, r4, v6, metatarsus p4, d2, r3, v8.

	Leg 1	Leg 2	Leg 3	Leg 4	Palp
Femur	2.75	2.50	2.31	2.94	1.69
Patella	1.75	1.63	1.31	1.75	1.00
Tibia	1.75	1.50	1.31	2.13	1.25
Metatarsus	1.69	1.50	2.13	3.19	—
Tarsus	1.13	1.06	1.13	1.38	0.63
Total	9.07	8.19	8.19	11.39	4.57

Palp (Fig. 4) with pyriform bulb; embolus lacks keels and tips of both appear to have been broken; cymbium without scopula, divided into two similar lobes, apically with four thick and four thinner spines; tibia incrassate. Spines: femur pl, d3, patella pl, patella pl, tibia p2, v4, tarsus 8 apical.

Paired claws with two long, juxtaposed rows each of about nine teeth; unpaired claws absent on all tarsi; on all legs, two small thin tufts on distinct cuticular extension.

Ten to 15 trichobothria in row extending for full length of tibiae, curving row of 8-10 on metatarsi, and 10-12 proximal of crack or pseudosegmentation. Tarsal organ a low dome with 3-4 shallow central concentric ridges; cuticle surface smooth; bothria corrugiform almost to base.

Abdomen 4.11 long, 2.89 wide; lungbook apertures broad, slit-like. Posterior median spinnerets 0.43 long, 0.30 wide, 0.25 apart. Basal, middle, apical segments of posterior lateral spinnerets 0.75, 0.70, 0.65 long, respectively; apical segment digitiform.

Paratype female. Carapace orange brown with brown markings radiating along strial edges, on lateral carapace, and caput; chelicerae orange brown; legs yellow brown with brown annulations on distal and proximal metatarsi, annulations lateral on tibiae and patellae, distolateral on femora; sternum, maxillae, and labium yellow brown; abdomen similar to male with less white.

Carapace 3.16 long, 2.68 wide; setae weaker than in male; caput flat, as high as thoracic region behind fovea; fovea short, straight.

Ratio of AME:ALE:PME:PLE, 7:10:8:10; from above, front row slightly procurved, back row recurved. Group occupies 0.47 of headwidth, 1.94 times wider than long, slightly wider behind than in front. MOQ 1.53 times wider behind than long, 1.35 times wider behind than in front. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.3; ALE-PLE, 0.3; PME-PLE, 0.1; PME-PME, 2.0.

Chelicerae similar to male but rastellum entirely absent; promargin with seven spaced teeth, basomesally with few granules. Labium 0.18 long, 0.64 wide, without cuspules. Maxillae 0.96 long in front, 1.16 long behind, 0.60 wide, anterior lobe less distinct than in male; six cuspules on inner angle. Sternum 1.54 long and wide; all sigilla oval, marginal.

Leg formula 41(2=3). Only tarsi IV distinctly cracked. Preening combs absent. Scopulae: very thin to absent on metatarsi I, II, almost absent on tarsi I, II, absent elsewhere. Spines (no spines on tarsi, femora I-IV with one long dorsal basal spine): leg I, femur d4, patella 0, tibia 0, metatarsus v3; leg II, femur d4, patella 0, tibia 0, metatarsus v4; leg III, femur dl, rl, patella p2, rl, tibia p2, dl, rl, v3, metatarsus p3, d3, r3, v7; leg IV, femur dl, rl, patella pl, tibia p2, dl, r3, v4, metatarsus p3, d3, r3, v8.

	Leg 1	Leg 2	Leg 3	Leg 4	Palp
Femur	2.20	1.92	1.88	2.00	1.44
Patella	1.48	1.36	1.12	1.44	0.96
Tibia	1.40	1.16	1.04	1.72	0.96
Metatarsus	1.08	1.12	1.52	2.56	—
Tarsus	0.76	0.80	0.80	1.08	0.96
Total	6.92	6.36	6.36	8.80	4.32

Palp with thin scopulae on tarsi and four spines on ventral tibia.

Claws, tufts, tarsal organ, and trichobothria similar to male.

Abdomen 4.08 long, 2.68 wide; lungbook apertures broad, oval. Posterior median spinnerets 0.32 long, 0.14 wide, 0.26 apart. Basal, middle, apical segments of posterior lateral spinnerets 0.50, 0.40, 0.38 long, respectively; apical segment digitiform. Spermathecae two (Fig. 8), each a short lobe divided for apical one half into two dissimilar ectally directed lobes.

Distribution.—Known only from the type locality in Chiapas, Mexico.

RELATIONSHIPS

Mexentypesa lacks the keels on the palpal bulb and intercheliceral tumescence that would otherwise qualify it for membership in the Pycnothelinae (see Raven 1985). It shares with the Californian genus *Calisoga* (Nemesiinae) the pseudosegmented tarsi of males and the digitiform apical segment of the posterior lateral spinnerets. If those two genera are considered sister groups, an hypothesis is required to explain the degree of difference in scopulae development: very dense in *Calisoga* but almost nil in *Mexentypesa*. In the current sister group of *Calisoga, Nemesia* plus *Brachythele*, the scopulae are also weak but generally not so weak as in *Mexentypesa*. Most parsimoniously, the presence of scopulae is considered an autapomorphy of *Calisoga* (congruent with the clavate setae on the upper inner faces of the chelicerae), and the weak scopulation of *Mexentypesa* is either homologous to the condition in *Nemesia* plus *Brachythele* or simply a species autapomorphy. Hence, the sister group of *Mexentypesa* is considered to be *Calisoga*.

The inclusion of *Mexentypesa* in the Theraphosoidina is rejected for three reasons. First, the inclusion of *Mexentypesa* in the Nemesiidae requires only the acquisition of claw tufts, thus incurring one additional step in the family cladogram (Raven 1985, Fig. 1). Second, its inclusion in the Theraphosoidina requires several homoplasies (not including those also required in the Nemesiidae): biserially dentate paired claws in females; absence of theraphosoid coupling spurs; long distinct maxillary lobe; numerous maxillary and labial cuspules; and pseudosegmented tarsi in males. Third, its association with the barychelids with biserial dentition of the claws in females (*Troglothele*, *Monodontium*) would require the proposal of other homoplasies, e.g., digitiform apical segment of the posterior lateral spinnerets, weak leg scopulae, plesiomorphic eye group configuration. However, males of those barychelid genera are not known; hence, their relationships are in doubt and no further discussion is warranted. In summary, *Mexentypesa* is currently accommodated in the Nemesiidae with the minimum of homoplasy.

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